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ARTIFICIAL FUEL COMPOSITION

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The present invention relates to artificial fuel which may be made in briquets of any size or shape, and which has improved desirable characteristics, making it suitable for starting fires of less ignitable fuels, as well as for use by itself, especially for outdoor broiling and cooking.

The primary object of this invention is to make a solid fuel composition in briquet or pellet form which requires no starter material other than a match or similar lighter, and which burns clean and compares favorably in B.t.u. content and lasting quality with other less ingitable fuel compositions.

A further object is to provide a composition fuel which may be exposed to rain or dampness without losing its ready ignitability.

A further object is to make a composition fuel in briquet or pellet form, which is clean, and may be handled freely without danger of soiling the hands, or containers or storage bins.

A further object is to reduce the cost of composition fuel, while improving its characteristics as pointed out above.

A further object is to produce a composition fuel which, while having all the advantageous characteristics for use by itself, is also useful with other less ignitable fuels in starting a fire, whether it be indoors or outdoors.

Other and more specific objects will appear in the following detailed description of the present invention.

This composition fuel may be made by any well known continuous molding processes, preferably in a pour molding manner without compression.

The pour or semi-fluid mixture supplied to the molds is an aggregate of molten wax and residue ashes or burned anthracite coal, which have been sifted through a ⅛" to ½" mesh screen, before mixing with the wax. The heavier aliphatic hydrocarbon waxes of the paraffine series between $C_{18}H_{38}$ and $C_{25}H_{52}$ are preferred, to which about 2⅓ to 2½ parts by volume of the sifted ashes are added to one part by volume of the molten wax. The mixture, while still fluid, is poured into the molds of any suitable size and shape, where it is solidified and released as briquets or pellets comprising a thin and fine latticework of the wax, in the interstices of which the ash particles are substantially homogeneously embedded. In this finely divided state the wax is readily ignitable by a match or other lighter of small capacity, for the same reason, it is believed, as a candle wick, because the ashes act as a dilutent for the mass of the wax and as an insulation against the dispersion of the heat applied so as to immediately raise the temperature in a concentrated portion of the fuel to the ignition temperature of the wax in the immediate vicinity of the light. Whereas, in applying a flame to a solid mass of wax, no portion of the wax is normally able to reach ignition temperature except that which might be soaked up by the lighting material, the rest of the wax would all melt by transmitting heat from the flame and would flow away without ever igniting. It is believed that the same failure to ignite would occur

even if the solid wax was a latticework like that of the present invention, but having voids in place of the ash particles, because the voids would not prevent the wax from running together as it was melted, and its temperature would be maintained under the ignition temperature by easy transmission of its heat to the solid portions of the wax with which it runs together without restriction or insulation such as the ash particles provide.

In any event, it was discovered that the mixture in the proportions specified above, produced a readily ignitable composition that would burn clean and evenly at a sufficiently slow rate for use in portable grills, outdoor fireplaces and the like, as well as for starting fires of less readily ignitable fuels, such as wood, coal or other artificial fuels, which previously required the use of paper wads and/or wood slivers, etc. or a spraying of volatile liquid fuels. The use of the latter was usually accomplished with a degree of danger from explosion of the volatilized portion.

The present fuel composition eliminates all the problems of starting outdoor fires while camping, or in portable grilles at home, and makes the chore of outdoor cooking a pleasant one, because of the absence of any dirt. Even after a rain, the moisture can be shaken off and without any drying the fuel chunks are ready for instant use, without the need of any starting material. Furthermore, the cost of materials going into this composition is very small by comparison to any type of a coal or charcoal product.

In the present composition, a portion of the ash content up to one half, could be substituted by refuse coal, powdered charcoal, cinders, coke, etc., without substantially increasing the cost or detrimentally affecting the other desirable characteristics such as ease of igniting, simplicity of composition, water repellency, and cleanliness in handling. Obviously, this would tend to raise the B.t.u. value of the composition in accordance with the extent of the substitution of the carbon material for the ash material.

Many obvious modifications, such as adding small amounts of binder materials to prevent disintegration after burning as well as add to the B.t.u. content, might be made, without substantial effect on the desirable characteristics of the fuel, and without departing from the spirit and scope of the present invention, as defined in the appended claims.

What is claimed is:

1. An artificial fuel composition adapted especially for use in portable grills and outdoor fireplaces, comprising briquets composed of a substantially homogeneous mixture of one volume of the heavier aliphatic hydrocarbon waxes of the parafine series $C_{18}H_{38}$ to $C_{25}H_{52}$ and 2⅓ to 2½ volumes of the residue ashes of burned anthracite coal.

2. Fuel briquets as defined in claim 1, wherein the residue ashes have been sifted from a screen of substantially ⅛" to ½" mesh and thoroughly mixed with said wax before being molded.

3. Artificial fuel briquets composed of a substantially homogeneous mixture of one volume wax and 2⅓ to 2½ volumes of finely divided waste ash material.

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